

Name: _____

Date: _____

A2 CC1: Polynomial Practice HW

1. If $f(-6) = 0$, then _____ is a factor of $f(x)$.
2. If $3x - 2$ is a factor of $f(x)$, then _____ is a zero of $f(x)$.
3. If $f(x) = (5x - 2)(2x + 1)(3x - 1)$, then the zeros of $f(x)$ are: _____
4. If $f(7) = 0$, then a factor of $f(x)$ is: _____
5. If $3x - 4$ is a factor of $f(x)$, then $f(\text{_____}) = 0$
6. Is $x - 3$ a factor of $x^5 - 243$?
7. Factors of $x^3 + 2x^2 - 5x - 6$ are $(x - 2)$, $(x + 3)$ and $(x + 1)$. What are the zeros of the polynomial?
8. Given the zeros of $x^3 - 3x^2 - 18x + 40$ are 2, -4, and 5. What are the factors of the polynomial? Check by multiplication.
9. Show that -4 is a zero of $f(x) = x^3 + 6x^2 + 11x + 12$.
10. Given that $(x + 1)$ is a factor of $f(x) = 3x^3 - 7x^2 - 18x - 8$ find all zeros of $f(x)$.
11. One root of $2x^3 + 7x^2 - 33x - 18 = 0$ is -6. Find the complete solution set of this equation.
12. Show that $(x + 2)$ is a factor of $x^3 + 3x^2 + 4x + 4 = 0$. Use this information to find the solution set of this equation.
13. Find the remainder when $x^{124} - 5x^{76} + 2x^{45} - 3x + 5$ is divided by $x + 1$.
14. If $x + 3$ is a factor of $f(x) = x^3 + 4x^2 + x - 6$, find the complete factorization of $f(x)$.
15. One root of $x^3 + 4x^2 - 4x - 1 = 0$ is 1. Find the other roots.